September 22, 1952

Dr. A. J. Weil
Bronx Hospital
Fulton Avenue & 169 Street
Bronx 56, N.Y.

Dear Dr. Weil:

Before starting to write this letter, which is going to include a request for some cultures I hope you still have, I pulled out some of our older correspondence from the letter-files. I was very much interested to see the exchange of January and February 1950, in which we discussed the question of the role of phage in "transformation" experiments.

At that time, apparently, I was wondering whether the classical examples might not somehow be related directly to bacteriophage infection (lysogenicity). I was apparently trying to avoid the conclusion that genetic factors that, in a sense, really belonged to the bacterium could be transmitted through the medium as appeared to be the case in the transformation experiments. Since that time, a good deal has happened in the laboratory, and I am surprised to find that I now hold quite a different position, but one where phage again plays a prominent role. You may have noticed some portents of a paper that Zinder and I have in press (J. Bact. next month or so) on genetic transduction in Salmonella. To make quite a long story short, we have come to the conclusion that phage particles can transport fragments of genetic material from the host on which they were grown to their new host cells. Their specificity depends, however, entirely on the bacterial host, so that the phage seems to play only a passive, or rather, carrier role. I might mention that we worked with this set of "transforming factors" for some time before we were realized that they were incorporated in phage particles. More recently, we have found circumstances where the phage has no detectable lytic effect (e.g. S. typhimurium phages on S. typhi), althought it is adsorbed, and functions as a genetic carrier. There is, on the other hand no patent relationship of this phenomenon to recombination in E. coli K-12 and the genetic patterns are quite distinctive.

The point of this letter, finally, is that I would be very grateful if you could again provide me with cultures of your Shigella system (viz. Weil and Binder 1947) which I should like to study now in comparison with our work on Salmonella and E. coli. I might add that we are just now getting well into serological-genetic studies with these organisms, appropriate material having been discovered and worked up.

Sincerely yours